## Remarks

Following the above amendments, claims 1, 4-8, and 16-27 are pending in this application. Claims 2, 3, and 9-15 have been cancelled. The remaining independent claims — claims 1, 16, and 22 — have each been rejected under 35 U.S.C. § 102 as being anticipated by Tyner et al. (U.S. Patent No. 6,272,618) or Goodman et al. (U.S. Patent No. 6,282,601). Dependent claims 4-8 and 19-21 have been rejected under 35 U.S.C. § 102 as being anticipated by Tyner or Goodman. Dependent claims 17, 18, and 23-27 have bee rejected under 35 U.S.C. § 103 as being obvious over the combination of Goodman in view of Operating System Concepts by James L. Peterson and Abraham Silberschatz.

### A. Independent Claims 1, 16, and 22

Each of the independent claims of the present application has been rejected under 35 U.S.C. § 102 as being anticipated by Tyner or Goodman. A rejection under Section 102 on the grounds that the claimed invention is anticipated requires a demonstration that the each element of the rejected claim is present in a single prior art reference.

The independent claims of the present application — independent claims 1, 16, and 22 — are directed to methods and apparatuses for handling system management interrupts in a multiprocessor computer system. Each of the independent claims has been amended herein so that, as amended, each includes the limitation of cancelled claim 2. Specifically, each of the independent claims has been amended so that each includes the limitation that the step of selecting a processor for handling the system management interrupt be "accomplished according to an arbitration scheme."

Thus, once an interrupt has issued, and once the register contents of each processor, including the SMI signature, have been saved to a memory location, a processor is

selected to handle the interrupt. As specified in each of the independent claims, this selection occurs according to an arbitration scheme. Applicants respectfully submit that the invention of the amended independent claims, including the requirement that the interrupt handling processor be selected according to an arbitration scheme, is not suggested or disclosed by the prior art of record, including Tyner or Goodman.

**1. Tyner**

Tyner describes a multiprocessor computer system wherein the computer performs a "find processor" routine to determine which processor caused the interrupt. (See Tyner at col. 4, line 29-34, Figure 2 and step 120). Tyner does not disclose selecting a processor for the handling of the interrupt according to an arbitration scheme. Instead, Tyner plainly contemplates that the "find processor" routine is directed to identifying the processor that caused the interrupt in order to retrieve a program counter to identify where the processor stored its registers. (See Tyner at col. 4, line 34-43). Tyner is not directed to and does not disclose the process of identifying a second processor for the handling of the system management interrupt. The step of finding the processor that caused the interrupt, as disclosed by Tyner, does not disclose or suggest the step of selecting a second processor for the handling of the interrupt according to an arbitration scheme, as claimed in the amended independent claims.

**2. Goodman**

Likewise, Goodman does not disclose selecting a processor for the handling of the interrupt according to an arbitration scheme, as claimed by the invention, and the Examiner has recognized Goodman's limitations in this regard. On page 15 of the office action at issue, the Examiner, when making reference to a round robin scheme for allocating processor resources, plainly recognizes that "Goodman does not explicitly disclose assigning interrupts to each

processor in turn" The Examiner's clear recognition that Goodman does not disclose assigning interrupt handling in turn is instructive with respect to the content of Goodman's teachings. Selecting a processor according to an arbitration scheme, as claimed by the invention, requires a level of sophistication that is *higher* than that necessary for a round robin selection scheme, which the Examiner has indicated is not present in Goodman. If Goodman does not disclose a round robin scheme, as has been established, Goodman cannot and does not disclose a more sophisticated arbitration selection scheme.

When selecting a processor for handling an interrupt, an arbitration selection scheme may consider performance factors, such as available processing capacity for the purpose of maximizing multiprocessor performance. In contrast, a round robin scheme follows the simple format of assigning the workload to each processor in turn, without any consideration to processing capacity or maximizing multiprocessor performance. Because Goodman does not disclose even a simple selection scheme, as recognized by the Examiner, it is established that Goodman does not disclose a higher level selection scheme, such as an arbitration scheme, as claimed in each of the independent claims of the invention.

**B. Dependent claims 17, 18, and 23-27**

Dependent claims 17, 18, and 23-27 are rejected under 35 U.S.C. § 103 as being obvious over the combination of Goodman in view of Operating System Concepts by James L. Peterson and Abraham Silberschatz.

With respect to the rejection of the claims on obviousness grounds, applicants respectfully submit that the Examiner has not established a prima facie case of obviousness. First, it is recognized by the Examiner that Goodman, standing alone, does not teach or suggest all of the limitations of the claims in issue. Specifically, Goodman does not disclose the

limitation of providing a dedicated processor for the handling of system management interrupts. Because this limitation is not present in Goodman, and in order to establish a prima face case of obviousness, the Examiner must establish that there is a suggestion or motivation to modify Goodman to include within Goodman the limitation of a dedicated processor for the handling of system management interrupts. *See* Manual of Patent Examining Procedure 2143.01.

Applicants respectfully note that the Examiner has not pointed to any suggestion or motivation to modify the teachings of Goodman to include the limitation of providing a dedicated processor for handling system management interrupts. Instead, on page 15 of the office action, the Examiner has supplied only the conclusion that "it would have been obvious to one having ordinary skill in the art" to modify Goodman to include such a step. The Examiner has provided no evidence or finding of the specific understanding or principle within the knowledge of a person of ordinary skill in the art at the time of the invention that would have supplied the motivation to modify Goodman to include the claimed step. *See* MPEP 2143.01. Instead, the Examiner has only supplied the conclusion of what the person of ordinary skill would have done without providing us with any indication of the prior art knowledge that would have motivated the person of ordinary skill in the art to make the required modification to Goodman. As provided in MPEP 2143.01, a simple conclusion as to the supposed action of a person of ordinary skill in the art is insufficient to establish a prima facie case of obviousness.

The Examiner's reliance on unidentified prior art to provide the motivation to modify Goodman must be supported. *See* MPEP 2144.03. Here, the Examiner has not pointed to prior art knowledge that would provide the person of ordinary skill with the motivation to modify Goodman to include the step or limitation of providing a dedicate processor for interrupt handling. Because this prior art knowledge is not identified by the Examiner, Applicants hereby

respectfully traverse the lack of such a showing and request under MPEP 2144.03 that the Examiner supply an affidavit or other documentary proof establishing the prior art knowledge that would have motivated a person of ordinary skill in the art to make the required modifications to Goodman.

In addition, each of dependent claims 17, 18, and 23-27 are each allowable in that each claim depends from an otherwise allowable base claim. Claims 17 and 18 each depend from independent claim 16, and claims 23-27 depend, either directly or indirectly, from independent claim 22. As described above in Section A, each of independent claims 16 and 22 includes a limitation that the interrupt handling processor be selected according to an arbitration scheme. As discussed above in Section A, this limitation is not present in any of the prior art of record, including Tyner and Goodman.

### C. Dependent Claims 4-8 and 19-21

Dependent claims 4-8 and 19-21 will not be discussed individually herein, as each of these claims depends, either directly or indirectly, from an otherwise allowable base claim.

### D. Amendments to Cure Rejections under Section 112

The claims still pending in the present application — claims 1, 4-8, and 16-27 — have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. In the office action at issue, the Examiner provides the basis for rejecting the pending claims and, in some instances, recommends particular changes to the claims that would cure the rejections.

The applicants have made amendments to the pending claims in accordance with the requirements of Section 112 and in accordance with the Examiner's recommendations, including amendments such as those to provide sufficient antecedent basis for claim elements and to clarify terms noted by the Examiner as being unclear. The applicants respectfully submit that the pending claims, as amended, are in compliance with the requirements of Section 112.

## Conclusion

The applicants respectfully submit that the pending claims 1, 4-8, and 16-27 of the present invention, as amended, are allowable. The applicants respectfully request that the rejection of the pending claims be withdrawn and that these claims be passed to issuance.

Respectfully submitted,

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